

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, reconsideration of this application and withdrawal of the objections and rejection is requested. Claims 1-20 are now pending, wherein claims 1, 13 and 16 are independent.

Claim 3 is objected to for a spelling error. Amendment to claim 3 overcomes the objection thereto. Therefore, Applicants respectfully request withdrawal of the objection to claim 3, as amended.

Claim 19 is objected to allegedly for "failing to further limit the subject matter of a previous claim." This objection is misplaced. Claim 18 is directed to "encoder" while claim 19 is directed to "decoder." Therefore, Applicants respectfully request withdrawal of the objection.

Paragraph 3 of the Office Action ambiguously cites to 37 C.F.R. § 1.81(c). Applicants request clarification from the Examiner whether it is alleged that additional drawings are required and, if so, what topic(s) they must be drawn to. Applicants do not believe that any additional drawings are required for one of ordinary skill to understand the invention. Applicants also presume that if the invention were unclear that the Office Action would not have asserted an obviousness rejection against the claims, which implies that the Examiner understands the invention.

Claims 1-20 stand rejected under 35 U.S.C. 103(a) as allegedly being obvious in view of the artificial combination and modification of published U.S. Patent Application Publication No. 2003/0095532 to Kim et al. (hereinafter "Kim") and U.S. Patent No. 6,930,981 to Gopalakrishnan et al. (hereinafter "Gopalakrishnan").

Assignee respectfully disagrees with this rejection because the Office Action fails to present a prima facie case of obviousness.¹ Neither Kim nor Gopalakrishnan teach or suggest what the Office Action alleges they do. This renders the alleged motivation to combine and modify even more farfetched.

The gist of Kim can be gleaned from paragraphs 0047 – 0049. "[T]he present invention provides a method for encoding the CQI [Channel Quality Indicator] in the case where a

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

spreading factor of a channelization code used for the S-UL_DPCCH is 256.” Kim at ¶ 0047. Where “a coded symbol of the CQI has a 20-bit length, then (20,2) code, (20,3) code, (20,4) code and (20,5) code are required for CQI information lengths of 2, 3, 4, and 5, respectively. Therefore, there is a demand for a simple, high performance encoder capable of generating the 4 kinds of codes stated above.” Kim at ¶ 0048. “The present invention generates the 4 kinds of codes using a (32,5) second order Reed-Muller code.” Kim at ¶ 0049.

Claim 1. With regard to what the Office Action alleges that Kim discloses, the Office Action first cites to Fig. 9 and then jumps to Fig. 4 elements 451, 434, 441, and 443. However, this jump from Fig. 9 to Fig. 4 is inconsistent. To be consistent, i.e., to cite Kim for what it actually discloses, the correct path involves the path through elements 421, 423, and 424. Fig. 9 “illustrates a structure of an encoder for encoding CQI information bits.” Kim at ¶ 0079. Then the Office Action jumps to lines 17-18 in paragraph 0047 to quote a further unrelated snippet about the number of bits occupied by ACK/NACK and the remaining 20 bits for CQI.

Although Kim mentions the word retransmission, Kim is not concerned with how to accomplish retransmissions. Thus, it is no surprise that Kim fails to teach any of the claim limitations.

Kim is not directed to “[a] method of link adaptation and code space management,” as is claimed in Claim 1. The Office Action provided no citation to support its assertion.

Kim does not teach or suggest “encoding original transmission bits into initial turbo encoded symbols,” as is claimed in claim 1. The Office Action cited Fig. 9 element 903. However, Kim states that “[t]he present invention generates . . . 4 kinds of codes using a (32,5) second order Reed-Muller code.” Kim at ¶ 0049. Since, element 903 generates “4 kinds of codes using a (32,5) second order Reed-Muller code,” it does not teach or suggest the claim limitation “encoding original transmission bits into initial turbo encoded symbols.”

Likewise, the citation to Fig. 9 element 905 does not teach the claim limitation, “storing the initial turbo encoded symbols, as is claimed in claim 1,” because element 905, instead, stores the “4 kinds of codes using a (32,5) second order Reed-Muller code.”

¹ “The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.” MPEP § 2142.

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

Kim does not teach or suggest "interleaving and transmitting the initial turbo encoded symbols," as is claimed in claim 1. The Office Action cited Fig. 4 elements 451, 434, 441 and 443. However, as previously stated, this assertion is not consistent with the citation to Fig. 9. Were the Office Action attempting to be consistent with its previous arguments, the path to follow after the reference to Fig. 9 would involve elements 421, 423, and 424. Even were the Office Action to follow the consistent path and cite elements 452, 428, 441, and 443, Kim would still not teach or suggest, "interleaving and transmitting the initial turbo encoded symbols."

The Office Action admits that Kim fails to teach or suggest the next three claim limitations.

Kim does not teach or suggest the last claim limitation, "re-transmitting the turbo encoded symbols subsequent to selectively puncturing or repeating the turbo encoded symbols." The Office Action cited paragraph 0047, lines 17-18. However, this is an unrelated snippet about the transmission of and number of bits occupied by ACK/NACK and the remaining 20 bits for CQI. Paragraph 0047 has nothing to do with the Office Action's previous citations to Figs. 9 and 4. Paragraph 0047 is explaining that ACK/NACK occupies 10 bits, leaving 20 for CQI and, thus, the point behind the "(32,5) second order Reed-Muller code" because the "coded symbol of the CQI has a 20-bit length." Paragraph 0047, lines 17-18 is not at all directed to "re-transmitting the turbo encoded symbols subsequent to selectively puncturing or repeating the turbo encoded symbols," as is claimed in claim 1.

The Office Action is quite clearly engaging in improper hindsight by an attempted piecemeal reconstruction of the elements of the claimed invention. Kim fails to teach or suggest any of the limitations that the Office Action says it does. Further, the Office Action admits that Kim does not teach or suggest the remaining elements of claim 1. To put it mildly, Kim has nothing to do with the claimed inventions, whether alone or in any artificial combination of prior art.

The gist of Gopalakrishnan can be gleaned from its Summary, which states that, "[t]he mobile unit identifies a subset of standardized data rates using the available power and available Walsh code information received on the forward link. Based on a signal quality measurement such as carrier to interference ratio, the mobile unit selects a standardized data rate from the subset of standardized rates. The mobile then communicates its data rate selection using the

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

reduced number of bits and thereby more efficiently uses the bandwidth of the reverse link signaling channel.”

Like Kim, Gopalakrishnan is also not concerned with how to accomplish retransmissions. The citations to Gopalakrishnan in the Office Action, i.e., Col. 2, ll. 60-67, Col. 3, ll. 1-7, and Col. 8, ll. 47-65, do not teach or suggest the limitations in claim 1.

Gopalakrishnan is directed to selecting a subset of data rates based on power and Walsh code availability and then selecting a rate from the subset based on the C/I ratio. This does not teach or suggest the limitations of Claim 1.

In greater detail, Gopalakrishnan does not teach or suggest, at least, “determining rate matching factors corresponding to the number of available Walsh codes and the MCS level or “selectively puncturing or repeating the stored turbo encoded symbols based on the rate matching factors.” The Office Action fails to make any citations to Gopalakrishnan with regard to these claim limitations. Applicants, similarly, could not find any teaching or suggestion in Gopalakrishnan.

As for the purported motivation to artificially modify the artificial combination of Kim and Gopalakrishnan, it too is without merit. It is asserted that the CQI encoding scheme of Kim presents an obvious suggestion to modify it with the reduced data rate set scheme of Gopalakrishnan, or vice versa. The suggestion does not exist, the combination makes no sense and, irregardless, the combination still does not teach or suggest the claimed invention, not by a long shot.

The office action’s unsupported conclusory statements about obviousness are not evidence, and they are no substitute for evidence of a motivation to combine and/or modify.

An office action asserting an obviousness rejection must demonstrate a motivation or suggestion to combine or modify the alleged prior art while addressing only the problem confronting the inventor, but not the solution², and the subject matter of the invention and

² The “suggestion to combine [or modify] may be found in explicit or implicit teachings within the references themselves, from the ordinary knowledge of those skilled in the art, or from the nature of the problem to be solved. However, there still must be evidence that a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the same elements from the cited prior art references for combination [or modification] in the manner claimed.” *Ecolochem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 1375 (Fed. Cir. 2000) (citations omitted) (emphasis added); *see also In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) (emphasis added) (“particular findings must be made as to the reason the skilled

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

alleged prior art each in their entirety rather than only the differences between them.³

"To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made." MPEP § 2142. "[T]he examiner must then make a determination whether the claimed invention 'as a whole' would have been obvious at that time." *Id.* (emphasis added). "Knowledge of applicant's disclosure must be put aside in reaching this determination." *Id.* (emphasis added). "Impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." *Id.* (emphasis added). The teaching or suggestion to modify a reference must be found in the prior art and not applicant's disclosure. *Id.*

artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed").

"Although the suggestion to combine [or modify] references may flow from the nature of the problem, defining the problem in terms of the solution reveals improper hindsight in the selection of the prior art relevant to obviousness. Therefore, when determining the patentability of a claimed invention . . . , the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination [or modification]." *Ecolchem* at 1372 (citations omitted) (emphasis added).

"Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies the primary guarantee of objectivity in the process." *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citations omitted) (emphasis added). "Rarely . . . will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment." *Id.*; see also *In re Zurko*, 258 F.3d 1379, 1385 (Fed. Cir. 2001) ("deficiencies of the cited references cannot be remedied by . . . general conclusions about what is 'basic knowledge' or 'common sense.'"). The "common sense" or "common knowledge" of one skilled in the art is not a substitute for evidence. *In re Sang Su Lee*, 277 F.3d 1338 (Fed. Cir. 2002). Rather it is only a perspective from which one skilled in the art interprets the evidence. *Id.*

"Obvious to try is not the standard." *Ecolchem* at 1374. The fact "[t]hat prior art patents may have described . . . attempts that used different elements is not enough." *Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 1365 (Fed. Cir. 1998). The prior art must enable one skilled in the art to make and use the claimed invention before potentially rendering the claimed invention obvious. *Rockwell*, 147 F.3d at 1365. Furthermore, "[a] general incentive does not make obvious a particular result, nor does the existence of techniques by which those efforts can be carried out." *In re Deuel*, 51 F.3d 1552, 1559 (Fed. Cir. 1995).

³ "In determining obviousness, the invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety." *Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 1364 (Fed. Cir. 1998) (emphasis added). The Federal Circuit has elsewhere confirmed that the PTO cannot consider only the differences between reference(s) and claims as the invention itself, i.e., the PTO cannot myopically focus on the obviousness of the difference(s), but instead must broadly focus on the obviousness of the claimed invention as a whole relative to the reference(s). See, e.g., *Jones v. Hardy*, 727 F.2d 1524, 1528 (Fed. Cir. 1984); *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1383 (Fed. Cir. 1986). The Federal Circuit finds ample support for this in 35 USC 103, which states, ". . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious . . ." 35 USC § 103 (emphasis added).

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

"The mere fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination." MPEP § 2143.01 *citing In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (emphasis added). "If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *Id. citing In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984) (emphasis added).

Looking at the prior art and the subject matter of the invention on the whole as we must, the Office Action completely fails to point to anything in the prior art that would motivate or suggest to one of skill, knowing only about the problem but not the solution in the present application, to select Kim instead of any of the other millions of other patents and other reference materials in existence at the time of the invention in order to subsequently modify Kim at all, let alone to modify it based on Gopalakrishnan, in the precise manner to read on the claimed invention.

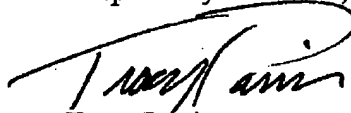
Moreover, the artificial combination and modification do not remotely teach or suggest the claimed invention anyway. The Office Action failed to cite to any portion of Kim or Gopalakrishnan for three claim limitations. This alone prevents the presentation of a prima facie case of obviousness. As for the citations to Kim, none of them support the proposition for which they were cited. The assertion of obviousness is wholly without merit.

The foregoing applies equally to the asserted rationale for rejecting claims 2-20. Claims 2-12 depend on claim 1. The Office Action states that independent "[c]laim 13 is rejected for the same reasons as [dependent] claims 2 and 10 combined." Claims 14-15 are dependent on claim 13. The Office Action states that independent "[c]laim 16 is rejected for the same reasons as claims 1 and 6 combined." Claims 17-20 are dependent on claim 16. Applicants respectfully request that the obviousness rejection of claims 1-20 be withdrawn.

Appl. No. 10/652,673
Response dated June 29, 2006
Response to Office Action of December 29, 2005

In view of these remarks, Applicants submit that this application is in condition for allowance and the Examiner's prompt action in accordance therewith is respectfully requested. The Commissioner is authorized to charge any fees and/or credit any overpayment to Deposit Account 20-0668 of Texas Instruments Incorporated.

Respectfully submitted,



Tracy Parris
Reg. No. 46,980
Indranil Chowdhury
Reg. No. 47,490
Attorneys for Applicant

Robert D. Marshall, Jr.
Texas Instruments Incorporated
P.O. Box 655474, MS 3999
Dallas, TX 75265
(972) 917-5290